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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,265	10/15/2003	Seong Moon	2013P104	7213
8791 7590 04/30/2007 BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			EXAMINER YUEN, KAN	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 04/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/686,265	Applicant(s) MOON ET AL.	
	Examiner Kan Yuen	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/15/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 1-11 are objected to because of the following informalities:

In claim 1, line 4, the term "conrol" should be spelled as "control".

In claim 6, lines 19-20, the term "a disassembled data segment" seems to refer to the same term in lines 17-18, if this is true, it is suggested to change the term "a disassembled data segment" to "the disassembled data segment". Similar problem exist in claim 8, lines 18.

Claims 2-5 is also objected to the independent claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ho et al (Pat No.: 6934280).

For claim 1, Ho et al. disclosed the method of a routing processor which shapes at least one physically existing external network interface as a logically virtual network interface (see column 3, lines 65-67, and see column 4, lines 1-11, and see fig. 1, service mapper), the Service Mapper 120 can be the router processor. In the reference, the LMI can be the external interface between the FR and Service Mapper 110, and in order to emulate the FR service to the Service Mapper 120, the Mapper 110 needs to be configured with the LMI. So, we can interpret that the LMI has established its position in Mapper120 as a virtual external interface; and at least one linecard processor which includes the external network interface (see fig. 1, Service Mapper 110 that connected with TDM, ATM, IP, FR), as revealed in the drawing, Service Mapper 110 can be

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interpreted as the linecard processor with external interfaces connected with TDM, ATM, IP, and FR, wherein the routing processor (see fig. 3, Mapper 120) and the linecard processor (see fig. 2, Mapper 110) control a maximum transmission unit (MTU) of the external network interface by disassembling packet data (see column 5, lines 8-20), transmitted and received between the routing processor and the linecard processor, into data segments of a predetermined size and assembling the disassembled data segments into the original packet data structure, if the MTU of the external network interface is greater than the MTU of an internal data communication channel in the router (see column 5, lines 65-67, and see column 6, lines 1-5, and see fig. 4, re-order buffer 410), as revealed in the reference, the unit 230 performs frame (packet) segmentation based on larger than the MTU into smaller sizes than the MTU, and the unit 410 assemble the segments. Although the reference did not explicitly disclose the routing processor unit and the linecard processor unit are located within the router, however the functions of router processor and linecard processor can be implemented into a router. The motivation for using the method as taught by Ho et al. being that it routs difference type of packets from different networks such as TDM, ATM, FR or IP regardless the rate and the sizes of the packets.

Regarding to claim 2, Ho et al. also disclosed the method of the routing processor comprises: a first network interface which is physically connected to the linecard processor through an Ethernet switch (see fig. 1, IP service 140), although the reference did not explicitly disclose the Ethernet switch, but as revealed in column 3, lines 48-56, the Frame Relay as an example of one of the services. As known in the art

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that the FR can incorporate packets from different protocols such as Ethernet and X.25, therefore we can interpreted that the IP service 140, or the IP Network 130 comprises an Ethernet switch or alike to support FR services. In fig. 1, the IP Network 130 is interconnected between Mapper 110 (linecard processor), and Mapper 120 (router processor). The network interface on the Mapper 120 side can be the De-encapsulation unit 310 connected with the single service; and a virtual network interface unit which disassembles the packet data into data segments of the predetermined size and assembles the data segments into the original packet data structure, if the MTU of the external network interface is greater than the MTU of the first network interface (see column 2, lines 13-26, see column 5, lines 8-20, and column 6, lines 1-6, see fig. 2, fig. 3, and fig. 4). As revealed in the reference, on the Mapper 110 (linecard processor), unit 230 performs segmentation, and on the Mapper 120 (router processor), the unit re-ordering buffer 410 performs assembling the segments. Moreover, this procedure can be done in vise-versa direction, so in conclusion, the Mapper 120 can disassembles and reassembles segments based on the MTU. In this case, the unit 320 can be interpreted as the virtual network interface unit. The motivation for using the method as taught by Ho et al. being that the Ethernet switch can the FR service.

Regarding to claim 3, Ho et al. also disclosed the method of the linecard processor comprises: a second network interface which is physically connected to the routing processor through the ethernet switch (see fig. 1), as seems in fig. 1, the Mapper 110 can route any one of interfaces TDM, ATM, FR, or IP through the IP service 140 to Mapper 120. Therefore we can interpreted that the plurality type of

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interfaces can be connected to the Mapper 120; and an external inter process communication (IPC) interface which disassembles the packet data into data segments of the predetermined size and assembles the data segments into the original packet data structure, if the MTU of the external network interface is greater than the MTU of the second network interface (see column 2, lines 13-26, see column 5, lines 8-20, and column 6, lines 1-6, see fig. 2, fig. 3, and fig. 4). As revealed in the reference, on the Mapper 110 (linecard processor), unit 230 performs segmentation, and on the Mapper 120 (router processor), the unit re-ordering buffer 410 performs assembling the segments. Moreover, this procedure can be done in vise-versa direction, so in conclusion, the Mapper 110 can disassembles and reassembles segments based on the MTU. In this case, the unit 230 can be interpreted as the IPC interface.

Regarding to claim 4, Ho et al. also disclosed the method of the virtual network interface unit comprises at least one virtual network interface corresponding to the external network interface, respectively, each of which comprises a disassembling/assembling unit for disassembling the packet data into data segments and assembling the data segments of the predetermined size into the original packet data structure, such that the MTU of the external network interface is not greater than each MTU of the first and second network interfaces (see column 2, lines 13-26, see column 5, lines 8-20, and column 6, lines 1-6, see fig. 2, fig. 3, and fig. 4). As revealed in the reference, on the Mapper 110 (linecard processor), unit 230 performs segmentation, and on the Mapper 120 (router processor), the unit re-ordering buffer 410 performs assembling the segments. Moreover, this procedure can be done in vise-versa

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direction, so in conclusion; the Mapper 110 and Mapper 120 can disassembles and reassembles segments based on the MTU. In fig. 3, the De-encapsulation unit 310 can be interpreted as virtual interface unit.

Regarding to claim 5, Ho et al. also disclosed the method of the external IPC interface comprises a disassembling/assembling unit for disassembling the packet data into data segments of the predetermined size and assembling the data segments of the predetermined size into the original packet data structure, such that the MTU of the external network interface is not greater than each MTU of the first and second network interfaces. (see column 2, lines 13-26, see column 5, lines 8-20, and column 6, lines 1-6, see fig. 2, fig. 3, and fig. 4). As revealed in the reference, on the Mapper 110 (linecard processor), unit 230 performs segmentation, and on the Mapper 120 (router processor), the unit re-ordering buffer 410 performs assembling the segments. Moreover, this procedure can be done in vise-versa direction, so in conclusion; the Mapper 110 and Mapper 120 can disassembles and reassembles segments based on the MTU. In fig. 3, the Encapsulation unit 230 can be interpreted as IPC interface unit.

Allowable Subject Matter

6. Claims 6-11 would be allowable if rewritten or amended to overcome the objection, set forth in this Office action. Regarding to claims 6 and 8, the prior art fails to teach the method of (e) if it is determined that data received by the external IPC interface is a disassembled data segment in step (d), removing the additional header

from the received data segment, assembling the received data segments into the original packet data, transmitting the assembled packet data to the external network interface, and requesting a packet data transmission to the external network interface; and (f) if it is determined that the data received by the external IPC interface is not a disassembled data segment in step (d), removing the additional header from the data, transmitting the data to the external network interface, and requesting the packet data transmission to the external network interface.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chang et al. (Pat No.: 7068616), Banga et al. (Pat No.: 6894976), Kajizaki et al. (Pub No.: 2001/0055317), and Higashida et al. (Pub No.: 2004/0170182), are show systems which considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413.

The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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